

IN THE CLAIMS

The claims pending in the application are reproduced below in accordance with 37 C.F.R. §1.121:

Listing of Claims:

1. (currently amended) An imaging system comprising:
one or more distributed ~~radiation~~ X-ray sources substantially surrounding a desired portion of an imaging volume and configured to emanate a radiation beam from a plurality of individual source positions around the imaging volume; and
one or more X-ray detectors configured to receive the radiation beam transmitted through the desired portion of the volume,
wherein at least one of the one or more distributed ~~radiation~~ X-ray sources and or the one or more X-ray detectors are displaceable transversely and one or more X-ray detectors are stationary to allow an unimpeded path for the radiation beam to illuminate the desired portion of the imaging volume and for the X-ray detector to receive the radiation beam.
2. (currently amended) The system of claim 1, wherein the one or more X-ray detectors are configured to move transversely to allow the radiation beam to illuminate the desired portion of the imaging volume by opening at least one individual aperture for the one or more distributed ~~radiation~~ X-ray sources to emanate the radiation beam.
3. (currently amended) The system of claim 1, wherein one or more sections of the one or more X-ray detectors are configured to move transversely and one or more sections of the one or more X-ray detectors are configured to be stationary to allow the radiation beam to illuminate the desired portion of the imaging volume by

opening at least one individual aperture for the one or more distributed radiation X-ray sources to emanate the radiation beam.

4. (currently amended) The system of claim 1, wherein the one or more X-ray detectors are configured to nutate to allow the radiation beam to illuminate the desired portion of the imaging volume by opening at least one individual aperture for the one or more distributed distributed radiation sources to emanate the radiation beam.

5. (currently amended) The system of claim 1, wherein one or more sections of the one or more X-ray detectors are configured to nutate and one or more sections of the one or more X-ray detectors are configured to be stationary to allow the radiation beam to illuminate the desired portion of the imaging volume by opening at least one individual aperture for the one or more distributed radiation X-ray sources to emanate the radiation beam.

6. (currently amended) The system of claim 1, wherein the one or more X-ray detectors are configured to move transversely to intercept the radiation beam by covering at least a portion of the aperture from one or more individual X-ray source positions located generally opposite to the one or more distributed radiation X-ray sources emanating the radiation beam.

7. (currently amended) The system of claim 1, wherein the one or more X-ray detectors are configured to nutate to intercept the radiation beam by covering at least a portion of the aperture of one or more individual X-ray source positions located generally opposite to the one or more distributed radiation X-ray sources emanating the radiation beam.

8. (currently amended) The system of claim 1, wherein one or more sections of the one or more X-ray detectors are configured to move transversely and one or more sections of the one or more X-ray detectors are configured to be stationary to intercept the radiation beam by covering at least a portion of the aperture of one or more individual X-ray source positions located generally opposite to the one or more distributed radiation X-ray sources emanating the radiation beam.

9. (currently amended) The system of claim 1, wherein at least one section of the one or more X-ray detectors are configured to nutate to intercept the radiation beam by covering at least partially the aperture of at least one different individual X-ray source position located generally opposite to the one or more distributed radiation X-ray sources emanating the radiation beam.

10. (currently amended) An imaging system comprising:
one or more distributed radiation X-ray sources substantially surrounding a desired portion of an imaging volume and configured to emanate a radiation beam from a plurality of individual X-ray source positions around the imaging volume; and
one or more X-ray detectors configured to be stationary and one or more X-ray detectors configured to move transversely for at least one of:
allowing the radiation beam to illuminate the desired portion of the imaging volume by opening at least one individual aperture for the one or more radiation X-ray sources to emanate the radiation beam; and
intercepting the radiation beam by covering at least a portion of the aperture ~~aperature~~ required by one or more individual X-ray positions located generally opposite to the one or more distributed radiation X-ray sources emanating the radiation beam.

11. (currently amended) An imaging system comprising:
one or more distributed ~~radiation~~ X-ray sources substantially surrounding a
desired portion of an imaging volume and configured to emanate a radiation beam from a
plurality of individual X-ray source positions around the imaging volume; and

one or more sections of one or more X-ray detectors configured to be stationary
and one or more sections of one or more X-ray detectors configured to move transversely
for at least one of:

allowing the radiation beam to illuminate the desired portion of the imaging
volume by opening at least one individual aperture for the one or more distributed
~~radiation~~ X-ray sources to emanate the radiation beam; and

intercepting the radiation beam by covering at least a portion of the ~~aperture~~
aperture required by one or more individual X-ray source positions located generally
opposite to the one or more distributed ~~radiation~~ X-ray sources emanating the radiation
beam.

12. (currently amended) An imaging system comprising:
one or more distributed ~~radiation~~ X-ray sources substantially surrounding a
desired portion of an imaging volume and configured to emanate a radiation beam from a
plurality of individual X-ray source positions around the imaging volume; and

one or more X-ray detectors configured to be stationary and one or more X-ray
detectors configured to at least one of nutate or move transversely for at least one of:

allowing the radiation beam to illuminate the desired portion of the imaging
volume by opening at least one individual aperture for the one or more distributed
~~radiation~~ X-ray sources to emanate the radiation beam; and

intercepting the radiation beam by covering at least a portion of the aperture of at
least one different individual X-ray source position located generally opposite to the one
or more distributed ~~radiation~~ X-ray sources emanating the radiation beam.

13. (currently amended) An imaging system comprising:
one or more distributed ~~radiation~~ X-ray sources substantially surrounding a
desired portion of an imaging volume and configured to emanate a radiation beam from a
plurality of individual X-ray source positions around the imaging volume; and

one or more sections of one or more X-ray detectors configured to be stationary
and one or more sections of one or more X-ray detectors configured to at least one of
nutate or move transversely for at least one of:

allowing the radiation beam to illuminate the desired portion of the imaging
volume by opening at least one individual aperture for the one or more distributed
~~radiation~~ X-ray sources to emanate the radiation beam; and

intercepting the radiation beam by covering at least a portion of the aperture of at
least one different individual X-ray source position located generally opposite to the one
or more distributed ~~radiation~~ X-ray sources emanating the radiation beam.

14. (currently amended) A stationary CT system comprising:
a plurality of X-ray sources arranged relative to a volume to be imaged, each X-
ray source configured to emanate an X-ray beam; and
a plurality of X-ray detectors arranged generally across from respective X-ray
sources, wherein at least one of an X-ray source from the plurality of X-ray sources and or
a X-ray detector from the plurality of X-ray detectors are configured to be displaced
transversely to allow an unimpeded path for the X-ray beam to illuminate a desired
portion of an imaging volume and for the X-ray detector to receive a transmitted X-ray
beam, and wherein the remaining X-ray detectors from the plurality of X-ray detectors are
stationary.

15. (currently amended) The system of claim 14, wherein the X-ray detector
is configured to at least one of nutate or move transversely and to open an aperture for an
adjacent X-ray source to emanate the X-ray beam.

16. (currently amended) The system of claim 14, wherein a section of the X-ray detector is configured to at least one of nutate or move transversely and one or more sections of the plurality of X-ray detectors are configured to be stationary to open an aperture for an adjacent X-ray source to emanate the X-ray beam.

17. (currently amended) The system of claim 14, wherein the X-ray detector is configured to at least one of nutate[s] or move[s] traversely transversely to cover at least a portion of an aperture for one or more adjacent X-ray sources located generally opposite to an X-ray source emanating the X-ray beam.

18. (currently amended) The system of claim 14, wherein a section of the X-ray detector is configured to at least one of nutate or move transversely and one or more sections of the plurality of X-ray detectors are configured to be stationary to cover at least a portion of an aperature aperture for one or more adjacent X-ray sources located generally opposite to an X-ray source emanating the X-ray beam.

19. (currently amended) An imaging system for scanning a volume to be imaged, the system comprising:

one or more distributed radiation X-ray sources substantially surrounding a desired portion of an imaging volume and configured to emanate a radiation beam from a plurality of individual X-ray source positions around the imaging volume;

a control circuit operably coupled to the source;

one or more X-ray detectors to receive a transmitted radiation;

a motor controller configured to displace at least one of the source, and the detector;

a processing circuit operably coupled to the detector configured to receive a the plurality of projection images and to form one or more reconstructed slices representative of the volume being imaged; and

an operator workstation operably coupled to the processing circuit configured to display the one or more reconstructed slices,

wherein at least one of the one or more distributed radiation X-ray sources and or the one or more X-ray detectors are displaceable transversely and one or more X-ray detectors are stationary to allow an unimpeded path for generation of the radiation beam and the reception of the transmitted radiation beam.

20. (currently amended) The system of claim 19 further comprising:
one or more X-ray detectors configured to be are stationary; and
one or more X-ray detectors configured to at least one of nutate or move transversely for at least one of:

allowing the radiation beam to illuminate the desired portion of the imaging volume by opening at least one individual aperture for the one or more distributed radiation X-ray sources to emanate the radiation beam; and

intercepting the radiation beam by covering at least a portion of the aperture of at least one different individual X-ray source positions located generally opposite to the one or more distributed radiation X-ray sources emanating the radiation beam.

21. (currently amended) The system of claim 19 further comprising:
one or more sections of one or more X-ray detectors configured to be stationary;
and
one or more sections of one or more X-ray detectors configured to one of nutate or move transversely for at least one of:

allowing the radiation beam to illuminate the desired portion of the imaging volume by opening at least one individual aperture for the one or more distributed radiation X-ray sources to emanate the radiation beam; and

intercepting the radiation beam by covering at least a portion of the aperture of at least one different individual X-ray source positions located generally opposite to the one or more distributed radiation X-ray sources emanating the radiation beam.

22. (currently amended) An imaging system comprising:
one or more distributed radiation X-ray sources substantially surrounding a
desired portion of an imaging volume and configured to emanate a radiation beam from a
plurality of individual X-ray source positions around the imaging volume; and

one or more sections of one or more X-ray detectors configured to be stationary;
and

one or more sections of one or more X-ray detectors configured to one of nutate or
move transversely for at least one of:

allowing the radiation beam to illuminate the desired portion of the imaging
volume by opening at least one individual aperture for the one or more distributed
radiation X-ray sources to emanate the radiation beam; and

intercepting the radiation beam by covering at least a portion of the aperture of at
least one different individual X-ray source positions located generally opposite to the one
or more distributed radiation X-ray sources emanating the radiation beam.

23. (currently amended) An imaging system comprising:
one or more distributed radiation X-ray sources substantially surrounding a
desired portion of an imaging volume and configured to emanate a radiation beam from a
plurality of individual X-ray source positions around the imaging volume; and
one or more X-ray detectors configured to receive a transmitted radiation beam,
wherein at least one of the radiation X-ray source or the X-ray detector is
displaceable transversely and the one or more X-ray detectors are stationary to allow
illumination of the desired portion of the imaging volume and for the X-ray detector to
receive the transmitted radiation beam.

24. (currently amended) An imaging system comprising:
one or more distributed radiation X-ray sources substantially surrounding a
desired portion of an imaging volume and configured to emanate a radiation beam from a
plurality of individual X-ray source positions around the imaging volume; and

one or more X-ray detectors configured to receive a transmitted radiation beam, wherein at least one of the radiation X-ray source or the X-ray detector is nutated or displaced transversely and one or more X-ray detectors are stationary to allow illumination of the desired portion of the imaging volume and for the detector to receive the transmitted radiation beam.

25. (currently amended) A method of scanning a volume to be imaged, the method comprising:

triggering a distributed radiation X-ray source for emanating a radiation beam; displacing transversely one or more X-ray detectors positioned generally adjacent to the distributed radiation X-ray source to allow an unimpeded path for the radiation beam to illuminate an imaging volume; and

displacing one or more X-ray detectors positioned generally opposite to the distributed radiation X-ray source to intercept a transmitted radiation beam, wherein the one or more X-ray detectors comprise stationary detectors and movable detectors.

26. (currently amended) The method of claim 25 further comprising displacing a section of one or more X-ray detectors for allowing an unimpeded path for the radiation beam to illuminate the imaging volume, wherein the one or more X-ray detectors comprise stationary sections and movable sections.

27. (currently amended) The method of claim 25 further comprising displacing a section of one or more X-ray detectors for intercepting the transmitted radiation beam, wherein the one or more X-ray detectors comprise stationary sections and movable sections.

28.-30. (canceled).

31. (currently amended) A method of scanning a volume to be imaged, the method comprising:

triggering a distributed ~~radiation~~ X-ray source for emanating a radiation beam;
and

receiving a transmitted radiation beam via a X-ray detector,
wherein the distributed ~~radiation~~ X-ray source is displaceable transversely to
allow illumination of a desired portion of an imaging volume and for the X-ray detector
to receive the transmitted radiation beam.

32. (original) A method of scanning a volume to be imaged, the method comprising:

triggering a distributed ~~radiation~~ X-ray source for emanating a radiation beam; and
receiving a transmitted radiation beam via a X-ray detector,
wherein the distributed ~~radiation~~ X-ray source is nutated to allow illumination of a
desired portion of an imaging volume and for the X-ray detector to receive the transmitted
radiation beam.